REMARKS

Claims 26 and 44 are amended. Claims 19-24 are withdrawn. Claims 26-44, as amended, remain in the application. No new matter is added by the amendments to the claims.

The Rejections:

In the Final Office Action dated November 16, 2007, the Examiner rejected Claims 26-44 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In Claim 26, the phrase "determining a theoretical value" is deemed nonenabling as the specification does not provide any guidance as to how one does this. It is noted that the theoretical value as presently recited can be anything. As a result, determining a theoretical value appears to be irrelevant. For example, one skilled in the art can assign a value of 1 or 10 or 100 or 1000. Are all values acceptable? It is not the examiner's intention to be condescending about this issue but wishes merely to have the applicant's limitation clarified. The same issue applies to Claim 44.

In Claim 26, the phrase "determining a first new value for the compensation factor" is deemed noneneabling as to how one skilled in the art would determine a new compensation factor. For example, if the initial value were 100, how does the skilled artisan decide on the new value? Could it be 10 or 1000? If it can be any value, what is the purpose of determining the initial value? The same issue applies to determining a second value. Again, as stated above, it is not the examiner's intention to be belligerent about this issue. The same issue applies to Claim 44. Clarification and appropriate amendments are requested.

The Examiner rejected Claims 26-44 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 26, the phrase "measuring a pressure of the viscous material" is deemed vague and indefinite as to what said phrase means. The examiner understands how one can measure

the temperature of a material. But how does one measure the pressure of a material and is it different from the pressure of the system? Clarification is requested.

In Claim 26, the phrase "determining a theoretical value" is deemed vague and indefinite. It is noted that the theoretical value as presently recited can be anything. If the applicant intended for this, applicant should say so on the record and this rejection will be withdrawn. If not, however, any guidance as to what this theoretical value is should be incorporated in the claim. The same issue applies to Claim 44.

In Claim 26, the phrase "determining a first new value for the compensation factor" is deemed vague and indefinite as to what said phrase means. How does one determine a new value? Clarification is requested. The same issue applies to Claim 44.

In Claim 33, the phrase "establishing a cracking pressure" is deemed vague and indefinite as to what said term means. It is not clear what the cracking pressure has to do with the dispensation of the viscous material. The same issue applies to "establishing a linearity factor" in Claim 34.

The Examiner rejected Claims 26-44 under 35 U.S.C. 103(a) as being unpatentable over Putt (6,329,013). The Examiner stated that Putt discloses a method for dispensing a viscous solution by utilizing a dynamic flow control system which consists of a dosing system controlled by means of a computer unit and consists of at least one pressure part, a material container, a nozzle, and a pressure member displaceable in the material container (col.1 lines 5-12). In one embodiment, a test sequence is run before the dispensing operation and during the test sequence data is collected mainly about the dosing unit including the pressure within at least one pressure part, the position of the pressure member of the dosing unit, and a material feed pressure by the computer unit, a set value is determined for a material feed pressure and a material flow substantially with regard to the collected data and the material is dispensed with regard to the set value for flow controlled by means of a regulator, as a direct value of the set flow value and at the same time the application flow is controlled (col.3 lines 33-45). It should be noted that Putt specifically teaches of determining a set value for a material feed pressure and a material flow substantially in respect of collected data and applying the material with regard to the set value by controlling the dispensed flow (lines 35-40). Also, the computer unit can measure the volume of the dosing unit from a sensor and regulate the pressure with the pressure member (lines 40-45). The control unit 15 is arranged with a number of inputs and outputs, for collecting data as well as

for generation and transmitting control signals and may be controlled by the robot or another external control unit (col.4 lines 25-42) and controls a regulator 16 utilized to control the material flow (col.4 lines 43-61). The reference teaches the use of a pulse transducer (col.4 lines 5-19). However, the reference fails to specifically teach a compensation factor.

It is noted that the reference clearly teaches of measuring a value and comparing it with a set value and modifying a deposition parameter as a result and repeating. One skilled in the art would realize that the claimed compensation factor is merely what the computer would be assigned a value and results in an additional step with a more precise way of obtaining a specific parameter. It would have been obvious to utilize a compensation factor with the expectation of obtaining a more precise process of dispensing a material.

The limitations of Claims 27-44 have been addressed above.

The Response:

Applicant amended Claims 26 and 44 to clarify that the viscous material is dispensed under pressure. Support for these amendments is found in paragraphs [0025], [0026] and [0030] through [0032].

With respect to the rejections of Claims 26-44 under 35 U.S.C. 112, first and second paragraphs, Applicant notes that the phrase "determining a theoretical value" does not appear in either Claim 26 or Claim 44. Applicant assumes that the Examiner is referring to the phrase "determining a theoretical volume" that appears in Line 9 of each of Claims 26 and 44.

As recited in Claims 26 and 44, the theoretical volume of the viscous material dispensed during the first time period is determined based on:

1) the pressure measurements during the first time period and the initial value of the compensation factor (Claim 26); or
2) the control signals received from the pressure sensor during the first time period and the initial value of the compensation factor (Claim 44).

The term "theoretical volume" is completely defined in paragraph [0038] of Applicant's specification. It is the theoretical volume, as opposed to the actual volume measured by the flow meter **32** (paragraph [0024]), of the viscous material **10** dispensed over the first time period **T1** and is determined using the equation,

$$\text{theoretical volume} = \sum_{T1} [(P_{fi} - b) / f_{initial}]^N$$

wherein $\mathbf{f_{initial}}$ is the initial value for the compensation factor **f**, **b** is the cracking pressure, **Pa** is the pressure measurement taken at each time increment **ti** within the first time period **T1**, and **N** is the linearity factor. Therefore, one of ordinary skill in the art would be able to determine the value of the theoretical volume by simply solving the equation provided by Applicant. The phrase "theoretical volume" can't be anything as suggested by the Examiner. Claims 26 and 44 do not contain "subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention", nor are these claims "vague and indefinite" as to what the phrase means.

The Examiner questioned the purpose of determining the initial value of the compensation factor **f**. As explained above, the initial value $\mathbf{f_{initial}}$ for the compensation factor **f** is used in the equation (paragraph [0038]) for determining the theoretical volume of the viscous material **10** dispensed over the first time period **T1**. The initial value $\mathbf{f_{initial}}$ for the compensation factor is arbitrarily selected. This arbitrary selection is then corrected after the first time period **T1**.

As explained in paragraphs [0040] and [0041], the first new value $\mathbf{f_1}$ for the compensation factor **f** is determined according to the equation,

$$f_1 = \sum_{T1} [(P_{ti} - b)^N / \text{actual volume}]^{(1/N)}$$

The first new value $\mathbf{f_1}$ for the compensation factor **f** accounts for changes in operational characteristics of the viscous material **10** and the dispensing system **14** that occurred during the first time period **T1**. Hence, the first new value $\mathbf{f_1}$ for the compensation factor **f** can now be used for normal operation of the dispensing system **14** in a second time period **T2**, consecutive with the first time period **T1**. The same procedure is followed for determining the second new value of the compensation factor for use during a consecutive third time period, and so on.

Therefore, one of ordinary skill in the art would be able to determine the first new value of the compensation factor by simply solving the equation provided by Applicant. The phrase "first new value" can't be any value as suggested by the Examiner. Claims 26 and 44 do not contain "subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention", nor are these claims "vague and indefinite" as to what the phrase means.

As for the phrase "measuring a pressure of the viscous material", the second step of Claim 26 clearly recites that the pressure is measured "as the viscous material is dispensed". According to paragraph [0021] of Applicant's specification, the pump **18** conveys the viscous material **10** through the delivery conduit **20** to the nozzle **26** under pressure as is known by one of ordinary skill in the art. As described in paragraphs [0025] and [0031] of Applicant's specification, the pressure sensor **36** measures the pressure of the viscous material **10** as the viscous material is dispensed onto the workpiece **12**. Therefore, the phrase "measuring a pressure of the viscous material" in Claim 26 is not "vague and indefinite".

As for the phrase "establishing a cracking pressure", Claim 33 clearly recites that the cracking pressure represents frictional losses in the dispensing system to be overcome by the viscous material in order to begin dispensing onto the workpiece. This definition of the "cracking pressure" is found in paragraph [0032] of Applicant's specification where it is stated that the cracking pressure **b** represents the minimum pressure for the viscous material **10** to begin dispensing from the dispensing system **14** onto the workpiece **12**, i.e., the cracking pressure **b** compensates for frictional losses within the dispensing system **14**. The cracking pressure **b** is used in the equation for determining the theoretical volume (paragraph [0038]) and the equation for determining the new values for the compensation factor (paragraph [0040]). Therefore, the phrase "establishing a cracking pressure" in Claim 33 is not "vague and indefinite".

As for the phrase "establishing a linearity factor", Claim 34 clearly recites that the linearity factor represents shear thinning or shear thickening properties of the viscous material. This definition of the "linearity factor" is found in paragraph [0032] of Applicant's specification where it is stated that the linearity factor **N** corresponds to shear thinning or shear thickening properties of the viscous material **10**. For instance, the linearity factor **N** may be less than one for shear-thickening, greater than one for shear-thinning, and equal to one for linear material. As will be appreciated by those skilled in the art, the cracking pressure **b** and linearity factor **N** can be established based on trial and error using the equation for the theoretical dispensing rate,

$$\text{theoretical dispensing rate} = [(P - b) / f]^N$$

or by other methods such as manufacturer's suggestions and the like. Therefore, the phrase "establishing a linearity factor" in Claim 34 is not "vague and indefinite".

The Examiner rejected Claims 26-44 under 35 U.S.C. 103(a) as being unpatentable over Putt which shows a dosing system **10** for dispensing a viscous material. A dosing unit **13**

includes a material container **22** having an axially displaceable piston **25**. The piston **25** is moved by air pressure applied through valves **17** and **18**, and the position of the piston in the container **22** is sensed by a linear potentiometer or linear pulse transducer **26**. A control unit **15** receives a set flow signal at an input **151** with a value determined from a pressure/flow diagram (Fig. 3) and responds by generating a control signal to an air pressure regulator **16**. The regulator **16** controls a material pressure regulator **27** that regulates the material flow from the dosing unit **13**.

The Putt control unit **15** samples the feedback from the sensor **26** representing the dispensing speed. The differences in dispensing speed with regard to the set flow signal value at **151** causes the control unit **15** to adjust the control signal **153** to the regulator **16** which, in turn, adjusts the regulator **27** to change the material flow from the inlet/outlet **23** of the dosing unit **13**.

Applicant's Claim 26 includes the step of "measuring a pressure of the viscous material after each of a plurality of time increments within the first time period as the viscous material is dispensed during the first time period". Putt does not include a pressure sensor and does not measure the pressure of the viscous material.

Applicant's Claim 26 includes the step of "establishing an initial value of a compensation factor". The Examiner agrees that Putt "fails to specifically teach a compensation factor."

Applicant's Claim 26 includes the step of "determining a theoretical volume of the viscous material dispensed during the first time period based on the pressure measurements during the first time period and the initial value of the compensation factor". Putt can't determine a theoretical volume as recited because Putt doesn't measure the material pressure and does use a compensation factor.

Applicant's Claim 26 includes the step of "comparing the theoretical and actual volumes of the viscous material dispensed during the first time period". Putt can't perform this step because Putt doesn't determine the theoretical volume.

Applicant's Claim 26 includes the step of "determining a first new value for the compensation factor based on the comparison between the theoretical and actual volumes of the viscous material dispensed during the first time period". Putt can't perform this step because Putt does not use a compensation factor and doesn't determine the theoretical volume.

Applicant's Claim 26 includes the step of "measuring a pressure of the viscous material after each of a plurality of time increments within the second time period as the viscous material

is dispensed during the second time period". Putt does not include a pressure sensor and does not measure the pressure of the viscous material.

Applicant's Claim 26 includes the step of "determining a theoretical volume of the viscous material dispensed during the second time period based on the pressure measurements during the second time period and the first new value for the compensation factor". Putt can't determine a theoretical volume as recited because Putt doesn't measure the material pressure and does use a compensation factor.

Applicant's Claim 26 includes the step of "comparing the theoretical and actual volumes of the viscous material dispensed during the second time period". Putt can't perform this step because Putt doesn't determine the theoretical volume.

Applicant's Claim 26 includes the step of "determining a second new value for the compensation factor based on the comparison between the theoretical and actual volumes of the viscous material dispensed during the second time period". Putt can't perform this step because Putt does not use a compensation factor and doesn't determine the theoretical volume.

Applicant's Claim 44 includes the step of "receiving control signals from a pressure sensor after each of a plurality of time increments within a first time period as the viscous material is dispensed under pressure during the first time period". Putt does not include a pressure sensor and does not measure the pressure of the viscous material.

Applicant's Claim 44 includes the step of "receiving a first pulse from a flow meter after receiving the control signals from the pressure sensor within the first time period". Putt does not include a flow meter or a pressure sensor.

Applicant's Claim 44 includes the step of "determining a theoretical volume of the viscous material dispensed during the first time period based on the control signals received during the first time period and an initial value of a compensation factor". Putt can't perform this step because Putt does not use a compensation factor and doesn't determine the theoretical volume.

Applicant's Claim 44 includes the step of "comparing the theoretical and actual volumes of the viscous material dispensed during the first time period". Putt can't perform this step because Putt doesn't determine the theoretical volume.

Applicant's Claim 44 includes the step of "determining a first new value for the compensation factor based on the comparison between the theoretical and actual volumes of the

viscous material dispensed during the first time period". Putt can't perform this step because Putt does not use a compensation factor and doesn't determine the theoretical volume.

Applicant's Claim 44 includes the step of "receiving control signals from the pressure sensor after each of a plurality of time increments within a second time period as the viscous material is dispensed during the second time period". Putt does not include a pressure sensor and does not measure the pressure of the viscous material.

Applicant's Claim 44 includes the step of "receiving a second pulse from the flow meter after receiving the control signals from the pressure sensor within the second time period". Putt does not include a flow meter or a pressure sensor.

Applicant's Claim 44 includes the step of "determining a theoretical volume of the viscous material dispensed during the second time period based on the control signals received during the second time period and the first new value for the compensation factor". Putt can't perform this step because Putt does not use a compensation factor and doesn't determine the theoretical volume.

Applicant's Claim 44 includes the step of "comparing the theoretical and actual volumes of the viscous material dispensed during the second time period". Putt can't perform this step because Putt doesn't determine the theoretical volume.

Applicant's Claim 44 includes the step of "determining a second new value for the compensation factor based on the comparison between the theoretical and actual volumes of the viscous material dispensed during the second time period". Putt can't perform this step because Putt does not use a compensation factor and doesn't determine the theoretical volume.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.